

# NASA TECH BRIEF



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## Intermediate Rotating Ring Improves Reliability of Dynamic Shaft Seal

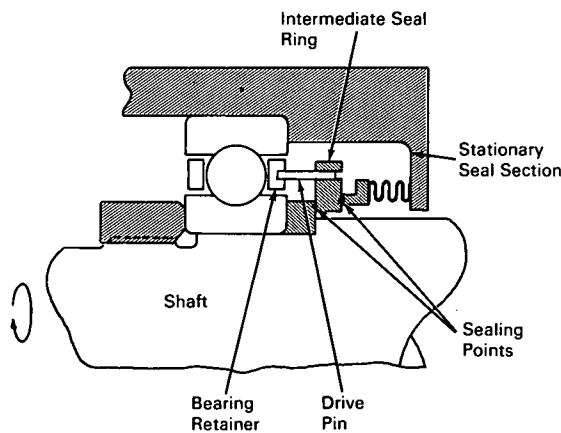


FIGURE 1

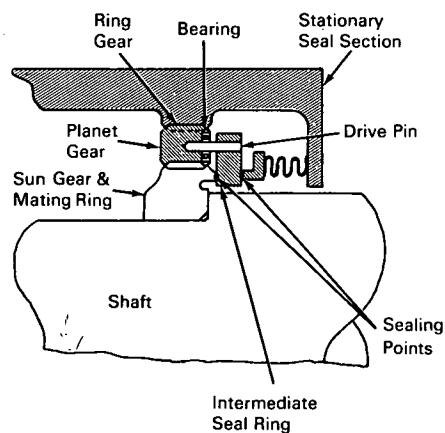


FIGURE 2

### The problem:

To improve the reliability of dynamic shaft seals. At high shaft speeds, the seal rubbing surfaces wear down rapidly.

### The solution:

An intermediate rotating ring placed between the rotating shaft sealing surface and the stationary surface, and driven at approximately one half the shaft speed, reduces wear on the rubbing surfaces.

### How it's done:

There are a number of practical methods for driving the intermediate ring at a speed of 40% to 45% of shaft speed. In Figure 1 the intermediate ring is driven by the retainer of an adjacent ball bearing; in Figure 2 the intermediate ring is driven by a planetary gear sys-

tem. Other methods of driving the ring will depend on the configuration of surrounding drive mechanisms.

### Note:

Inquiries concerning this innovation may be directed to:

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Reference: B66-10197

### Patent status:

No patent action is contemplated by NASA.

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of North American Aviation  
under contract to  
Marshall Space Flight Center  
(M-FS-575)  
Category 05